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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/832,924      | 04/12/2001  | Yasuo Iwasa          | 204985US0CONT       | 5237             |

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

[REDACTED] EXAMINER

CHANG, VICTOR S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1771     |              |

DATE MAILED: 05/23/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

|                            |                  |
|----------------------------|------------------|
| Application No.            | IWASA ET AL.     |
| Examiner<br>Victor S Chang | Art Unit<br>1771 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM

THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed

- after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.  
2a) This action is FINAL.      2b) This action is non-final.  
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
5) Claim(s) \_\_\_\_ is/are allowed.  
6) Claim(s) 1-30 is/are rejected.  
7) Claim(s) \_\_\_\_ is/are objected to.  
8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.  
10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.  
12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6.

- 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Objections***

1. Claims 10, 11, 16 and 21-26 are objected to because of the following

informalities:

In claims 10 and 11, line 1 of each claim, please change "oxide-base" to --oxide-based--.

In claim 16, line 3, change "diene-base" to --diene-based--.

In claims 21-26, the Examiner suggests change "stacked material" to --laminated film--.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, 6 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 53081578A (Derwent Abstract).

JP '578 is directed to a porous polyolefin tape. JP '578 teaches that the polyolefin tape has a porosity of 10 to 60%, and the tape is made by stretching a composition of 100 parts by weight of polyolefin, which contains 5-70 wt% inorganic bulking agent, and 0.1 to 10 parts by weight of polyhydric alcohol. The tape retains

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original properties of polyolefin, such as the thermal, mechanical, and processing properties, etc. Further, JP '578 teaches that the tape has excellent printing property.

Claims lack novelty.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 53081578A (Derwent Abstract).

The teachings of JP '578 are again relied upon as set forth above.

For claims 3 and 4, although JP '578 is silent about the contact angle of water on the porous polyolefin tape surface, JP '578 does teach that the porous polyolefin tape has excellent printing and painting properties (Abstract). As such, it is believed that the surface property pertaining to the water contact angle is either inherently disclosed, or an obvious modification to one skilled in the art, motivated by the desire to provide a suitable surface wetting property with required image resolution for printing and painting.

6. Claims 7-11, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53081578A (Derwent Abstract) either taken individually, or in view of JP 2001-019830 (English translation).

The teachings of JP '578 are again relied upon as set forth above.

For claims 7-11, it is noted that JP '578 does not expressly teach the use of dicarboxylic acid containing alkylene oxide-based polymer with a C<sub>4</sub> or larger alkylene oxide and its weight average molecular weight as the hydrophilic polymer component. However, it is believed that the use of the aforementioned polymer as a hydrophilic thermoplastic resin for ink jet recording substrate is known art. Alternatively, JP '830 is directed to a resin for ink-jet recording substrate. JP '830 teaches that the hydrophilic thermoplastic resin is obtained by reacting a polyalkylene oxide prepared by the addition polymerization of ethylene glycol and ethylene oxide and the addition polymerization of the adduct and an alkylene oxide and ethylene with a dicarboxylic acid. Further, JP '830 teaches that butylene oxide can be used to make the hydrophilic resin ([0046]). As to the molecular weight of the alkylene oxide-based polymer, it is also believed to be either inherently disclosed or an obvious optimization to one skilled in the art, motivated by the desire to obtain a porous polyolefin tape which retains its mechanical properties as taught by JP '578. As such, it would have been obvious to one skilled in the art to combine the teachings of JP '578 and JP '830 to form a high quality ink-jet recording substrate.

For 27 and 29, it is noted that JP '830 is directed to a resin for ink-jet recording substrate as set forth above.

7. Claims 12-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53081578A (Derwent Abstract).

The teachings of JP '578 are again relied upon as set forth above.

For claim 12, although JP '578 Derwent Abstract does not expressly teach the average particle size of the inorganic powder, it is believed that using a bulking agent, i.e., inorganic powder, with a particle size in the range of 0.3-2  $\mu\text{m}$  is well known and conventional in this art, as evidenced by JP 10-212367 (Abstract) which teaches a stretched resin film suitable for ink-jet printing containing 20-70 wt% calcium carbonate particles having an average particle size of 0.3-2  $\mu\text{m}$ .

For claims 13-16, although JP '578 does not expressly teach a dispersion modifier of epoxy group-containing olefinic copolymers or epoxy group-containing diene-based polymer, it is believed that the use of epoxy modified polymers as a dispersants is old and well known, as evidenced by Tachi et al. (US 4245061) which teaches that epoxy-modified polyolefin wax is very effective as a dispersant (column 5, lines 42-43). As such, it would have been obvious to one skilled in the art to incorporate a suitable amount of epoxy-modified polymer dispersant in an incompatible mixture, motivated by the desire to obtain a stable dispersed mixture.

For claims 13-14 and 17-18, although JP '578 does not expressly teach a dispersion modifier of phosphites and phosphonate compounds, it is believed that the use of phorous-containing compound as a dispersant is old and well known, as evidenced by JP 63006040A (Abstract) which teaches that bis(dialkylphenyl)pentaerythritol diphosphite is used to disperse solid polyolefin.

For claim 20, although JP '578 does not expressly teach an oxidative surface treatment, such as the corona treatment, it is believed that the use of corona treatment to improve printing quality in the art printing substrate is well known and conventional.

8. Claims 21-26, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53081578A (Derwent Abstract) in view of Ohba et al. (US 5233924).

The teachings of JP '578 are again relied upon as set forth above.

For claims 21-26, 28 and 30, JP '578 lacks the teaching of a stacked material, or laminated film, of a porous film layer and a base layer of thermoplastic film which is oriented and filled with inorganic powder. However, it is noted that Ohba's invention is directed to a printable synthetic paper comprising a base layer of polyolefin film layer, having an opacity of at least 80%, obtained by stretching a polyolefin film containing from 8 to 65% by weight of an inorganic fine powder, and having on one or both sides thereof a stretched ethylene-vinyl alcohol copolymer film layer (Abstract and column 3, line 68 to column 4, line 5). Ohba also teaches in Example 1 that the inorganic powder used is calcium carbonate having an average particle size of 1.5  $\mu\text{m}$  (column 10, lines 49-50). As such, it would have been obvious to one of ordinary skill in the art to modify JP '578 with Ohba's base layer, motivated by the desire to provide improved opacity and mechanical strength to the printing substrate.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone numbers

for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

VSC  
May 15, 2003

DANIEL ZIRKER  
PRIMARY EXAMINER  
GROUP 1300-  
1700

*Daniel Zirker*